

AMENDMENT UNDER 37 C.F.R. § 1.111  
U.S. Appl. No. 09/888,530 (Q65159)

**REMARKS**

Claims 1-4, 6-16, and 18-24 are all the claims pending in the application. By this Amendment, Applicants cancel claim 17.

**I. Drawings:**

Numbered paragraph 22 of the Office Action refers to a drawing objection that is allegedly set forth in numbered paragraph 1 of the Office Action. However, numbered paragraph 1 of the Office Action does not set forth any drawing objection. Nevertheless, Applicants add new Fig. 16 to illustrate the “inclination” feature recited in claims 7 and 19.

Applicants respectfully assert that new Fig. 16 does not raise any new matter issues since the confirmation of one portion of the disclosure to another portion thereof is clearly permissible. MPEP § 2163.06. That is, New Fig. 16 merely conforms the drawings to the written description.

Applicants also appropriately amend the written description to refer to new Fig. 16.

**II. Claim Objections:**

The Examiner objects to claim 22 because the subject of the phrase does not appear to correspond with the object of the phrase. Applicants appropriately amend claim 22 to address the Examiner’s concerns.

**III. Allowable Subject Matter:**

The Examiner allows claim 6. The Examiner also indicates that claim 18 would be allowable if it were rewritten in independent form. Applicants do not rewrite claim 18 (as

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suggested) since independent claim 13 is believed to be patentable for the reasons discussed in detail below.

**IV. Claim Rejections on Prior Art Grounds:**

The Examiner rejects:

1. claims 1-4, 7-9, 11, and 12 under 35 U.S.C. § 102(e) as being anticipated by U.S. 6,340,999 to Masuda et al. ("Masuda");
2. claim 10 under 35 U.S.C. § 103(a) as being obvious over Masuda;
3. claims 13, 14, 16, 17, 22, and 23 under 35 U.S.C. § 103(a) as being obvious over U.S. 5,046,826 to Iwamoto et al. ("Iwamoto");
4. claim 15 under 35 U.S.C. § 103(a) as being obvious over Iwamoto, and further in view of U.S. 5,341,231 to Yamamoto et al. ("Yamamoto");
5. claims 19-21 under 35 U.S.C. § 103(a) as being obvious over Iwamoto, and further in view of Masuda; and
6. claim 24 under 35 U.S.C. § 103(a) as being obvious over Iwamoto, and further in view of U.S. 5,461,547 to Ciupke et al. ("Ciupke").

Applicants respectfully traverse all of these rejections in view of the following remarks.

**A. Independent Claim 1:**

Applicants previously pointed out that independent claim 1 is patentable because it recites (among other things) that the optical path changing face is inclined at an inclination angle in a range of from **35-48 degrees** with respect to a reference plane of the lower surface of the plate-like member. An exemplary embodiment of this feature is depicted in Fig. 3, in which the optical path changing face is designated with reference character "A1," and the inclination angle is designated with reference character "θ1." At least this feature, in combination with the other

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limitations recited in claim 1, is not taught or suggested by the prior art relied upon in the grounds of rejection.

The rejection grounds apparently recognize that Masuda does not expressly disclose the inclination angle range defined by claim 1. Nevertheless, the rejection grounds cite Fig. 1 of Masuda and indicate that the reflection portion 3e (compared by the rejection grounds to the optical path changing face of the present invention) is inclined at an inclination angle that is *measured* to be about 40 degrees. This rejection position is simply incorrect and contrary to the examination guidelines set forth in the MPEP.

According to MPEP § 2125, drawings can anticipate claims if they clearly show the structure which is claimed. However, when the reference does not disclose that the drawings are to scale and is silent as to dimensions, arguments based on *measurement* of the drawing features are of little value. In the situation at hand, the Masuda reference does not indicate that the drawings are to scale, and therefore they do not define the precise proportions or dimensions of the illustrated elements. As such, the drawings cannot be scaled off or measured to show the specific inclination angle range required by claim 1, especially since Masuda is completely silent in this regard.

For these reasons, Applicants respectfully assert that the heavy reliance upon Masuda is misplaced. Consequently, the Examiner is respectfully requested to reconsider and withdraw this anticipation rejection.

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**B. Independent Claim 13:**

Independent claim 13 is amended to include the subject matter of claim 17 (which is canceled). Amended claim 13 is similar to claim 1 in that claim 13 recites (among other things) that the optical path changing face is inclined at an inclination angle in a range of from *35 to 48 degrees* with respect to a reference plane of the lower surface of the plate-like member. An exemplary embodiment of this feature is depicted in Fig. 11, in which the optical path changing face is designated with reference character "A1," and the inclination angle is designated with reference character "θ1." At least this feature, in combination with the other limitations recited in claim 13, is not taught or suggested by the prior art relied upon in the grounds of rejection.

The rejections grounds assert that Iwamoto teaches the range of *35 to 48 degrees* required by claim 13. In so doing, the rejection grounds cite Fig. 13 of Iwamoto and indicate that the reflection surface 1305 (compared by the rejection grounds to the light output means of the present invention) includes an optical path changing face inclined at an inclination angle that is *measured* to be about 40 degrees.

However, as noted above with respect to claim 1, when the reference does not disclose that the drawings are to scale and is silent as to dimensions, arguments based on *measurement* of the drawing features are of little value. Iwamoto does not indicate that the drawings are to scale, and therefore the drawings do not define the precise proportions or dimensions of the illustrated elements. As such, the drawings cannot be scaled off or measured to show the specific inclination angle range required by claim 13.

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For these reasons, Applicants respectfully assert that the heavy reliance upon Iwamoto is misplaced. Consequently, the Examiner is respectfully requested to reconsider and withdraw this anticipation rejection.

For the above reasons, Applicants respectfully assert that claims 1 and 13 are patentable, and that claims 2-4, 7-12, 14-16, and 18-24 are patentable at least by virtue of their dependencies.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,


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**APPENDIX**

**VERSION WITH MARKINGS TO SHOW CHANGES MADE**

**IN THE SPECIFICATION:**

**Page 11, fourth full paragraph:**

Fig. 14 shows a sectional view of another reflection type liquid-crystal display device with an explanatory view of a light transmission state; and

**Page 11, fifth full paragraph:**

Fig. 15 shows an explanatory view of a light transmission state according to Comparative Example; and

**Page 11, new paragraph after fifth full paragraph:**

Fig. 16 shows a plan view of a light pipe.

**Page 25, first full paragraph:**

From this point of view, and with reference to Fig. 16, the inclination angle  $\xi$  in the direction of arrangement of the prismatic structures with respect to the reference plane of the incidence side surface, that is, in the direction of the ridgelines of the prismatic structures, is preferably set to be in a range of  $\pm 30$  degrees, especially in a range of  $\pm 28$  degrees, more especially in a range of  $\pm 25$  degrees. Incidentally, the symbol " $\pm$ " means the direction of inclination with the incidence side surface as a reference. If the resolution of the liquid-crystal

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cell is low enough not to produce moire, or if moire is negligible, it is preferable that the direction of arrangement of the prismatic structures is as parallel with the incidence side surface as possible.

**IN THE CLAIMS:**

**Claim 17 is canceled.**

**The claims are amended as follows:**

7. (Amended) A light pipe according to claim 5~~1~~, wherein ridgelines defining edges of said optical path changing faces are inclined within a range of  $\pm 30$  degrees with respect to a reference plane of said incidence side surface.

13. (Amended) A light pipe comprising:  
a plate-like member including light output means formed in an upper surface of said plate-like member so that light incident on an incidence side surface of said plate-like member is exited from a lower surface of said plate-like member through said light output means;  
an adhesive layer having a refractive index lower than that of said plate-like member; and  
a light-diffusing layer including fine prismatic structures formed in a surface thereof and bonded to said lower surface of said plate-like member through said adhesive layer,  
wherein said light output means formed in said upper surface of said plate-like member is constituted by a plurality of sectionally triangular prismatic structures having optical path

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changing faces each inclined at an inclination angle in a range of from 35 to 48 degrees with respect to a reference plane of said lower surface.

19. (Amended) A light pipe according to claim ~~17~~13, wherein ridgelines defining edges of said optical path changing faces are in a range of  $\pm 30$  degrees with respect to a reference plane of said incidence side surface.

22. (Amended) A light pipe according to claim 13, wherein ~~the refractive index of~~ said adhesive layer for bonding said light-diffusing layer to said lower surface of said plate-like member is constituted by a tacky layer.



FIG. 16

